US EPA ARCHIVE DOCUMENT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 98-197

NPDES NO. CA0083119

WASTE DISCHARGE REQUIREMENTS
FOR
YOLO COUNTY CENTRAL LANDFILL
GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
YOLO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

Yolo County (hereafter Discharger) submitted a Report of Waste Discharge, dated 5 March 1998, and applied for a permit renewal to continue a discharge of waste under the National Pollutant Discharge Elimination System (NPDES) from the Yolo County Central Landfill Groundwater Extraction and Treatment System.

The Discharger owns and operates a groundwater extraction, treatment, and disposal system for polluted groundwater which underlies the Yolo County Central landfill. The extraction/treatment system and landfill are in Sections 29 and 30, T9N, R3E, MDB&M, as shown on Attachment A, a part of this Order. Treated groundwater is discharged to an ephemeral unnamed agricultural slough which is tributary to the Yolo Bypass, a water of the United States at the point, latitude 38°, 36', 30" and longitude 121°, 41', 19".

The operation of the landfill is regulated under separate Waste Discharge Requirements, Order No. 96-223, in accordance with California Code of Regulations, Title 27. Order No. 96-223 requires the Discharger maintain a minimum separation of 5-feet between groundwater and the landfill waste management units. Groundwater underlying the landfill has been found to be polluted with volatile organic compounds (VOCs). The groundwater treatment system consists of air stripping to remove the VOCs. The Report of Waste Discharge describes the treated groundwater discharge as follows:

Monthly average dry weather flow:	0.22 million gallons per day (mgd)
Design flow dry weather:	0.22 mgd
Average Temperature:	68°F Summer; 66°F Winter

Constituent	mg/l	lbs/day
COD	5.0	9.2
Total Suspended Solids	1.0	1.8
Boron	4.9	9.0
Selenium	0.023	0.042

4. In addition to the surface water discharge, the Discharger discharges treated groundwater to onsite ponds for fire suppression, fire prevention and landscape irrigation. The Discharger tries to maximize the use of land disposal for the extracted groundwater. Pond Disposal Limitations have been included in this Order to assure compliance with the permit and prevent nuisance conditions. Pond Disposal Limitations will provide protection from levee failure, minimize over breeding of mosquitoes and reduce the chance of nuisance conditions from odors. Groundwater Limitations have been included in the Order to assure that the underlying groundwater quality is protected from

percolation of problem constituents in the treated groundwater.

5. The U.S. Environmental Protection Agency (EPA) and the Board have classified this discharge as a minor discharge.

6. The Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin Basins (hereafter Basin Plan) which contains water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.

7. EPA adopted the National Toxics Rule (NTR) on 5 February 1993. The NTR contains water quality standards applicable to this discharge.

8. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. In January 1994, Yolo County completed an Effluent and Receiving Water Quality Assessment (ERWQA) in which the treatment system effluent was analyzed for NTR and U.S. EPA Priority Pollutants. Based on information submitted as part of the application, in the ERWQA, and as directed by monitoring and reporting programs, the Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective for boron and selenium. Sampling for COD, sulfate, total suspended solids, mercury and thallium, all of which were limited under Order No. 93-019, has shown that these constituents do not pose a threat to water quality and are not reasonably expected to be discharged at concentrations of concern. Volatile organic compounds, the pollutants underlying the landfill, will be limited to non-detectable concentrations in the discharge to be consistent with the antidegradation provisions of 40 CFR 131.12, State Water Resources Control Board Resolution No. 68-16 and the Basin Plan.

9. Sampling data reported in the Report of Waste Discharge (RWD) and Discharger Self Monitoring Reports show the treatment system effluent Boron concentration at approximately 4.9 mg/l. The California State Action Level (Department of Health Services) is 1.0 mg/l. Boron has been shown to have toxic effects on plants. The agricultural water quality goal is 0.75 mg/l (U.S. Environmental Protection Agency, water quality criteria) and 0.70 mg/l (Water Quality for Agriculture, Westcot and Ayres). Information submitted in the RWD shows that, at times, the receiving stream contains no upstream flow for dilution. The RWD also shows that when flow does exist within the receiving stream, concentrations of boron frequently exceed the agricultural water goals upstream, allowing no assimilative capacity. The source of boron has not been established, but, may be naturally occurring and not due to landfill operations. The discharge has a reasonable potential of exceeding, and causing the receiving stream to exceed, the agricultural water quality goal for boron. The Basin Plan designates the receiving stream as having the beneficial use of agriculture and diversions for agricultural uses are known to exist downstream. The 0.75 mg/l criterion for boron was developed to be protective for long term irrigation on sensitive crops. A numerical effluent limitation for boron has been included in this permit to protect the receiving stream agricultural beneficial use.

10. Sampling data reported in the Report of Waste Discharge (RWD) show the treatment system effluent concentration of selenium at approximately 0.023 mg/l. Federal regulations require

effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Board finds that the discharge does have a reasonable potential to cause or contribute to cause violation of the Basin Plan narrative prohibition against the discharge of toxic constituents in toxic concentrations for selenium. The source of selenium has not been established, but, may be naturally occurring and not due to landfill operations. Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life recommends that selenium concentrations not exceed 0.02 mg/l as a one-hour average and 0.005 mg/l as a 4-day average. A numerical effluent limitation for selenium has been included in this permit to protect against the discharge of toxic constituents in toxic concentrations.

11. Methylene chloride is a volatile organic compound and a common laboratory contaminant. Sampling of the discharge regularly shows the presence of detectable concentrations of methylene chloride. The detection of methylene chloride has been reported as laboratory error in Discharger Self Monitoring Reports without supporting documentation. This permit limits the discharge of volatile organic compounds, the pollutants underlying the landfill, to non-detectable concentrations to be consistent with the antidegradation provisions of 40 CFR 131.12, State Water Resources Control Board Resolution No. 68-16 and the Basin Plan. Laboratory quality assurance and control (QA/QC) measures are reasonably available to determine if the methylene chloride is actually present in the discharge or if the detection is due to laboratory contamination. This permit requires the Discharger provide adequate laboratory QA/QC measures to determine compliance with discharge limitation for volatile organic compounds.

12. This permit requires that the discharge not cause toxicity in the receiving stream to protect the designated beneficial use of preservation and enhancement of fish, wildlife and other aquatic resources. Chronic toxicity testing of the discharge has shown significantly reduced survival and reproduction of ceriodaphnia dubia (water fleas). A Toxicity Reduction Evaluation (TRE) is required to identify the toxic constituent(s) and this permit may be reopened to include effluent limits for the identified toxicant.

13. The beneficial uses of the unnamed agricultural slough and the Yolo Bypass downstream of the discharge are agricultural supply; water contact and noncontact recreation; esthetic enjoyment; navigation; ground water recharge, fresh water replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources.

14. The beneficial uses of the underlying groundwater are municipal and domestic, industrial, and agricultural supply.

15. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution No. 68-16. The impact on existing water quality will be insignificant.

16. Effluent limitations, and toxic effluent standards established pursuant to Sections 301, 302, 304, and 307 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

17. The discharge is presently governed by Waste Discharge Requirements Order No. 93-019, adopted by the Board on 29 January 1993.

18. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.

19. Yolo County issued a Notice of Exemption (NOE), dated 5 November 1992, for a categorical exemption under Section 15308, Class B, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.), and the State CEQA Guidelines. The Board has reviewed the NOE and concurs there are no significant impacts on water quality.

20. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

21. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

22. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that Order No. 93-019 is rescinded and that Yolo County, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

Discharge Prohibitions:

Discharge of treated groundwater at a location or in a manner different from that described in the Findings is prohibited.

The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by the attached Standard Provisions and Reporting Requirements A.13.

Effluent Limitations:

Effluent discharged to surface water shall not exceed the following limits:

Constituents	Units	Monthly Average	4-day Average	Daily Maximum
Volatile Organic Compounds (VOC)[1]	µg/l	ND[2]	2X	ND[3]
Boron[4]	mg/l	0.75		
Selenium[4]	mg/l		0.005	0.02

[1] VOCs include all constituents detected using EPA laboratory method 601.

[2] ND (non-detectable) using EPA standard method 601 (or equivalent), with a minimum detection level of 0.5 µg/l.

Adequate quality assurance and quality control measures must be conducted to determine compliance with the discharge limit.

[3] The daily maximum is established at 2-times the detection level to account for common sampling and laboratory errors.

[4] Limitations for boron and selenium are for total, not dissolved, metals.

The discharge shall not have a pH less than 6.5 nor greater than 8.5.

The peak discharge flow shall not exceed 0.40 mgd.

Survival of aquatic organism in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay - - - - - - - - - - - - - - - - - - 70%

Median for any three or more consecutive bioassays - - - - 90%

Receiving Water Limitations:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.

The discharge shall not cause the following in the receiving water:

Concentrations of dissolved oxygen to fall below 5.0 mg/l.

Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

Aesthetically undesirable discoloration.

Fungi, slimes, or other objectionable growths.

Turbidity to increase more than 20 percent over background levels.

The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

Deposition of material that causes nuisance or adversely affects beneficial uses.

The normal ambient temperature to be altered more than 5°F.

Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human

health.

Violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

D. Pond Disposal Limitations:

1. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.

2. As a means of discerning compliance with Pond Disposal Limitation No. 1, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l.

3. The pond disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

4. Ponds shall not have a pH less than 6.5 or greater than 8.5.

5. Ponds shall be managed to prevent breeding of mosquitoes by such means as;

   a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

   b. Weeds shall be minimized through control of water depth, harvesting, or other means.

   c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

6. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the nonirrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

7. On or about 1 October of each year, available pond storage capacity shall at least equal the volume necessary to comply with Pond Disposal Limitation No. 1.

8. Water discharged to the ponds shall not contain detectable concentrations of volatile organic compounds (VOCs). VOCs include all constituents detected using EPA laboratory method 601 (or equivalent) with a minimum detection level of at least 0.5 µg/l.

E. Groundwater Limitations:

The discharge shall not cause underlying ground water to:

1. Be degraded.

2. Contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

F. Provisions:

1. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and upon approval conduct the TRE, and this Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.

2. There are indications, in chronic toxicity sampling results, that the discharge may contain constituents that have caused, or have a reasonable potential to cause, or contribute to an exceedance of Receiving Water Limitations which prohibit the discharge of toxic pollutants in toxic concentrations and require that aquatic communities not be degraded. A joint TRE/TIE workplan, acceptable to the Board, has been submitted by Sierra Foothill Laboratory. Yolo County is participating in the group study to evaluate chronic toxicity for the Yolo County Central Landfill. The results of the group study will be used to determine if the toxic substance at Yolo County's Central Landfill is consistent with other Valley dischargers. If the toxic substance is different at the landfill than at other Valley wastewater facilities, the Discharger shall comply with the following time schedule in submittal of a Toxicity Reduction Evaluation (TRE)/Toxicity Identification Evaluation (TIE) workplan:

Task	Compliance Date
Submit TRE/TIE workplan[1]	**30 December 1998**

[1] The workplan shall, at a minimum, include a schedule for conducting a laboratory investigation in undiluted effluent, in accordance with EPA Region IX and X, Whole Effluent Toxicity Testing Programs, 31 May 1996, and EPA Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluent, Phase 1 (EPA/600/6-91/005F). For the purpose of this study, a toxic impact is defined as any significant reduction in survival, growth or reproduction of an aquatic organism when compared with the control.

The Discharger shall submit to the Board on or before the compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Board by letter when it returns to compliance with the time schedule.

3. The Discharger shall use the best practicable cost-effective control technique currently available to limit mineralization to no more than a reasonable increment.

4. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."

5. The Discharger shall comply with the attached Monitoring and Reporting Program No. 98-197, which is part of this Order, and any revisions thereto, as ordered by the Executive Officer.

   When requested by EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

6. This Order expires on **1 October 2003**, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **180 days in advance** of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

7. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of or clearance from the State Water Resources Control Board (Division of Water Rights).

8. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

   To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name, address, and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 23 October 1998.

GARY M. CARLTON, Executive Officer

RPM:lsb.yolo.wdr

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 98-197

NPDES NO. CA0083119

FOR
YOLO COUNTY CENTRAL LANDFILL
GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
YOLO COUNTY

Specific sample station locations shall be established under direction of the Board's staff, and a description of the stations shall be attached to this Order.

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency
Electrical Conductivity @25°C	µmhos/cm	Grab	Monthly
pH	Number	Grab	Monthly
Acute Toxicity[1]	% Survival	Grab	2XAnnually
Flow	mgd	Meter	Continuous
Temperature	°F	Grab	Monthly
EPA 601 VOCs	µg/l	Grab	Monthly
Selenium	mg/l	Grab	Monthly
Boron	mg/l	Grab	Monthly

[1] Acute toxicity sampling shall be conducted using EPA-600-4-90-027F, or later amendment, using juvenile rainbow trout as the test species.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

Station	Description
R-1	50 feet upstream from the point of discharge
R-2	500 feet downstream from the point of discharge

Constituents	Units	Station	Sampling Frequency
pH	Number	R-l, R-2	Monthly
Turbidity	NTU	R-l, R-2	Monthly
Temperature	F (C)	R-l, R-2	Monthly
Electrical Conductivity @25°C	µmhos/cm	R-1, R-2	Monthly

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-l and R-2. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens or coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring report.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA 600/4-91-002, or later amendment. Chronic toxicity samples shall be collected at the discharge of the air stripping unit prior to its entering the receiving stream. Grab samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria is not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum

Frequency: Twice per year

Dilution Series: No dilution is required since the receiving stream provides no dilution.

POND MONITORING

Pond samples shall be representative of the volume and nature of the discharge. Time of collection of a grab sample shall be recorded. Pond monitoring shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency
pH	pH units	Grab	Monthly
Dissolved oxygen	mg/l	Grab	Monthly
Electrical Conductivity	µmhos/cm	Grab	Monthly
Odors		Observation	Monthly
Color		-Observation	Monthly
Freeboard	Feet	Measurement	Monthly
Volatile Organic Compounds[1]	µg/l	Grab	Monthly

[1] Volatile organic compounds shall be monitored at the effluent of groundwater treatment system prior to discharge into the ponds.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **30th day of the month** following sample collection. Monthly and annual monitoring results shall be submitted by the **30th day of the month** following each calendar month and year, respectively.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

a. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

b. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by:

GARY M. CARLTON, Executive Officer

23 October 1998
(Date)

RPM:lsb:10.23.98

INFORMATION SHEET

YOLO COUNTY CENTRAL LANDFILL
GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
YOLO COUNTY

Yolo County owns and operates a groundwater extraction, treatment, and disposal system for polluted groundwater which underlies the Yolo County Central landfill. Treated groundwater is discharged to an unnamed agricultural slough which is tributary to the Yolo Bypass. The operation of the landfill is regulated under separate Waste Discharge Requirements, Order No. 96-223, in accordance with California Code of Regulations, Title 27. Order No. 96-223 requires the Discharger maintain a minimum separation of 5-feet between groundwater and the landfill waste management units. Groundwater underlying the landfill has been found to be polluted with volatile organic compounds (VOCs). The groundwater treatment system consists of air stripping to remove the VOCs. In addition to the surface water discharge, the Discharger discharges treated groundwater onsite for fire suppression, fire prevention and landscape irrigation. The beneficial uses of the unnamed agricultural slough and the Yolo Bypass downstream of the discharge are agricultural supply; water contact and noncontact recreation; esthetic enjoyment; navigation; ground water recharge, fresh water replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources.

In addition to the surface water discharge, the Discharger discharges treated groundwater to onsite ponds for fire suppression, fire prevention and landscape irrigation. The Discharger tries to maximize the use of land disposal for the extracted groundwater. Pond Disposal Limitations have been included in the Order to assure compliance with the permit and prevent nuisance conditions. Pond Disposal Limitations will provide protection from levee failure, minimize over breeding of mosquitoes and reduce the chance of nuisance conditions from odors. Groundwater Limitations have been included in the Order to assure that the underlying groundwater quality is protected from percolation of problem constituents in the treated groundwater.

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. In January 1994, Yolo County completed an Effluent and Receiving Water Quality Assessment (ERWQA) in which the treatment system effluent was analyzed for NTR and U.S. EPA Priority Pollutants. Based on information submitted as part of the application, in the ERWQA, and as directed by monitoring and reporting programs the Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective for boron and selenium. Sampling for COD, sulfate, total suspended solids, mercury and thallium, all of which were limited under Order No. 93-019, has shown that these constituents do not pose a threat to water quality and are not reasonably expected to be discharged at concentrations of concern. Volatile organic compounds, the pollutants underlying the landfill, will be limited to non-detectable concentrations in the discharge to be consistent with the antidegradation provisions of 40 CFR 131.12, State Water Resources Control Board

Resolution No. 68-16 and the Basin Plan.

Sampling data reported in the Report of Waste Discharge (RWD) and Discharger Self Monitoring Reports show the treatment system effluent Boron concentration at approximately 4.9 mg/l. The California State Action Level (Department of Health Services) is 1.0 mg/l. Boron has been shown to have toxic effects on plants. The agricultural water quality goal is 0.75 mg/l (U.S. Environmental Protection Agency, water quality criteria) and 0.70 mg/l (Water Quality for Agriculture, Westcot and Ayres). Information submitted in the RWD shows that, at times the receiving stream contains no upstream flow for dilution. The RWD also shows that when flow does exist within the receiving stream, concentrations of boron frequently exceed the agricultural water goals upstream, allowing no assimilative capacity. The source of boron has not been established, but, may be naturally occurring and not due to landfill operations. The discharge has a reasonable potential of exceeding, and causing the receiving stream to exceed, the agricultural water quality goal for boron. The Basin Plan designates the receiving stream as having the beneficial use of agriculture and diversions for agricultural uses are known to exist downstream. The 0.75 mg/l criterion for boron was developed to be protective for long term irrigation on sensitive crops. A numerical effluent limitation for boron has been included in this permit to protect the receiving stream agricultural beneficial use.

A boron sampling study was conducted in 1993 and 1994 by the Discharger, the results, in mg/l, are as follows:

DATE	R-1	R-2	R-3	YB1
7/15/93	no-flow	0.9	1.5	1.4
8/6/93	no-flow	2.6	1.3	1.2
9/8/93	0.7	1.1	1.5	
11/5/93	no-flow	3.6	1.5	0.4
1/26/94	0.2	0.3	0.8	0.3
4/21/94	0.5	1.0	1.0	1.0
5/12/94	0.6	2.8	1.2	1.0

The boron sampling shows the downstream waters regularly exceeding the agricultural goal of 0.7 mg/l. During periods of no existing upstream flow, the discharge would be the source at R-2, causing the exceedance of the boron limit.

Sampling data reported in the Report of Waste Discharge (RWD) show the treatment system effluent concentration of selenium at approximately 0.023 mg/l. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Board finds that the discharge does have a reasonable potential to cause or contribute to cause violation

of the Basin Plan narrative prohibition against the discharge of toxic constituents in toxic concentrations for selenium. Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life recommends that selenium concentrations not exceed 0.02 mg/l as a one-hour average and 0.005 mg/l as a 4-day average. A numerical effluent limitation for selenium has been included in this permit to protect against the discharge of toxic constituents in toxic concentrations.

Methylene chloride is a volatile organic compound and a common laboratory contaminant. Sampling of the discharge regularly shows the presence of detectable concentrations of methylene chloride. The detection of methylene chloride has been reported as laboratory error in Discharger Self Monitoring Reports without supporting documentation. This permit limits the discharge of volatile organic compounds, the pollutants underlying the landfill, to non-detectable concentrations to be consistent with the antidegradation provisions of 40 CFR 131.12, State Water Resources Control Board Resolution No. 68-16 and the Basin Plan. Laboratory quality assurance and control (QA/QC) measures are reasonably available to determine if the methylene chloride is actually present in the discharge or if the detection is due to laboratory contamination. This permit requires the Discharger provide adequate laboratory QA/QC measures to determine compliance with discharge limitation for volatile organic compounds.

This permit requires the discharge not cause toxicity in the receiving stream to protect the designated beneficial use of preservation and enhancement of fish, wildlife and other aquatic resources. Chronic toxicity testing of the discharge has shown:

	Fish	Ceriodaphnia		
Sample date		% survival	% survival	reproduction
4/23/96		100	10	0/16
10/23/96	94	60	1.8/22	
4/23/97		100	100	18/18
10/16/97	94	100	16/22	

The early data shows a trend of ceriodaphnia toxicity with reduced survival and reproduction. Chronic toxicity effects may be observed in discharges sporadically. With the limited data and the relative stability of a groundwater discharge, the early data indicates a reasonable potential of toxic discharges. The permit requires a TRE to determine the source of toxicity. Yolo County is participating in the group study to evaluate chronic toxicity for the Yolo County Central Landfill. The results of the group study will be used to determine if the toxic substance at Yolo County's Central Landfill is consistent with other Valley dischargers. If the toxic substance is different at the landfill than at other Valley wastewater facilities, the County will have complete a separate TRE/TIE to find and eliminate the toxic constituent.

10.23.98
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